

10/645,386

1-15. (CANCELED).

16. (CURRENTLY AMENDED) A speed measuring system for determining a speed of a measuring body rotating relative to a speed sensor, the speed measuring system comprising:

a plurality of one of electric and magnetic discontinuities located on a periphery of the rotating measuring body,

a distance measuring surface located on the periphery of the rotating measuring body, and

the speed sensor located at an air gap distance from the periphery of the rotating measuring body,

wherein the speed sensor is reactive to the plurality of one of electric and magnetic discontinuities, during rotation of the rotating measuring body, to provide [[at]] a speed output signal representing rotation of the plurality of one of electric and magnetic discontinuities past the speed sensor and having an amplitude dependent upon an air gap distance between the speed sensor and the periphery of the rotating measuring body,

a distance sensor located next to the speed sensor for scanning the distance measuring surface and providing a distance output signal representing the air gap distance between the distance sensor and the distance measuring surface on the periphery of the rotating measuring body, and

~~an evaluation device for determining the speed of rotation of the rotating measuring body by determining~~ compensating for any variation in the air gap distance when the amplitude of the speed output signal is one of greater than an upper release threshold and smaller than a lower release threshold, ~~wherein; and~~

the upper and the lower release thresholds are adjusted by the distance output signal so that the upper and the lower release thresholds are a function of the air gap distance.

17. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 16, wherein the evaluation device of the speed measuring system issues a speed unequal to a "zero" only when an amplitude of the speed output signal of the speed

6/27/06 - 11:46 AM

- 3 -

10/645,386

sensor is greater than the upper release threshold or smaller than the lower release threshold.

18. (CURRENTLY AMENDED) The speed measuring system according to claim 16, wherein a maximum speed output signal amplitude and a minimum speed output signal amplitude are respectively a function of the actual distance between the speed sensor and the rotating measuring body, and a change in the maximum speed output signal amplitude and the minimum speed output signal amplitude are respectively a function of the air gap distance between the speed sensor and the rotating measuring body ~~and a change in the air gap distance between the speed sensor and the rotating measuring body~~, and the evaluation device of the speed measuring system issues a speed unequal to a "zero" value as an actual speed of the rotating measuring body only when an amplitude of the speed output signal of the speed sensor is smaller by one of a defined differential amount and a defined percent deviation of the maximum speed output signal amplitude or is larger by a defined differential amount of the minimum speed output signal amplitude.

19. (CURRENTLY AMENDED) The speed measuring system according to claim 16, wherein, ~~[[when]]~~ as the air gap distance decreases, the upper and ~~[[a]] the~~ lower release thresholds and the maximum and ~~the~~ minimum speed signal amplitudes ~~are increased~~ increase.

20. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 16, wherein the distance sensor scans, without contact, a contour of the measuring body as the distance measuring surface.

21. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 16, wherein the speed sensor and the distance sensor are situated in a sensor housing.

22. (CURRENTLY AMENDED) The speed measuring system according to claim 16, wherein the speed measuring system has two speed sensors disposed immediately adjacent one another which detect ~~[[the]]~~ one of the electric and ~~the~~ magnetic discontinuities of the rotating measuring body independently of one another, and the evaluation device takes into account a phase offset between both speed sensor

06/27/06 - 11:45 AM

10/645,386

signals so that the speed measuring system delivers, as an output, at least one of the speed, a direction of rotation and an angularity of the rotating measuring body.

23. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 22, wherein the two speed sensors and the distance sensor are situated in a sensor housing.

24. (CURRENTLY AMENDED) The speed measuring system according to claim 17, wherein the upper and the lower release thresholds and maximum and minimum speed amplitudes are stored as sensor-specific characteristic lines in the evaluation device of the speed measuring system.

25. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 24, wherein the sensor-specific characteristic lines are adaptable according to the distance output signal and are a function of the air gap distance.

26. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 16, wherein the evaluation device of the speed measuring system is integrated in a sensor housing.

27. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 16, wherein the evaluation device of the speed measuring system is situated in a separate control unit.

28. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 16, wherein the distance sensor works according to one of an inductive measuring principle, a magnetic-resistive measuring principle, an optical measuring principle and a Hall measuring principle.

29. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 16, wherein the speed sensor works according to a measuring principle in which the speed output signal amplitude depends on the distance between the speed sensor and the rotating measuring body.

30. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 29, wherein the distance sensor works according to one of an inductive measuring principle, a magnetic-resistive measuring principle, an optical measuring principle and a Hall measuring principle.

02/08 11:49 AM

10/645,386

**31. (CURRENTLY AMENDED) A speed measuring system comprising:**

at least one stationary speed sensor for detecting speed of a measuring body rotating relative to the at least one stationary speed sensor in which one of electric and magnetic discontinuities are provided on a periphery of the measuring body, and the speed sensor, located at a defined distance from the measuring body, reacts to a direction of movement of the discontinuities situated on the measuring body as the measuring body is moved past the speed sensor by generating a speed output signal representing the movement of the measuring body past the speed sensor; and

a distance sensor located at a predetermined location with respect to the speed sensor for determining an actual distance between the ~~[[speed]]~~ distance sensor and the measuring body and generating a distance output signal representing the actual distance between the distance sensor and the measuring body, the actual distance between the distance sensor and the measuring body representing an actual distance between the speed sensor and the measuring body and a change in the distance between the speed sensor and the measuring body representing a change in the distance between the speed sensor and the measuring body, and ~~a change in the distance output signal representing a change in the distance between the speed sensor and the measuring body~~ being constantly used to adapt release thresholds of the at least one stationary speed sensor that are specific to the speed sensor relative to a change in an actual air gap between the measuring body and the speed sensor. ◆◆

**32. (PREVIOUSLY PRESENTED) A speed measuring system for determining a speed of a measuring body rotating relative to a speed sensor comprising:**

one of electric and magnetic discontinuities provided on a periphery of the measuring body,

the speed sensor being located at a defined distance from the measuring body and reacting to a direction of movement of the discontinuities situated on the measuring body as the measuring body is moved past the speed sensor to generate a speed output signal representing movement of the measuring body past the speed sensor,

8/27/06 - 11:40 AM

10/645,386

a distance sensor located at a predetermined location relative to the speed sensor for determining an actual distance between the distance sensor and the measuring body and generating a distance output signal representing an actual distance between the speed sensor and the measuring body wherein a change in the distance output signal represents a change in the actual distance between the speed sensor and the measuring body, and wherein

an actual speed of the measuring body is determined from the speed output signal of the speed sensor evaluated according to the distance output signal of the distance sensor in an evaluation device of the speed measuring system to improve reaction sensitivity of the speed sensor; and

wherein a maximum speed output signal amplitude specific to the speed sensor and a minimum speed output signal amplitude specific to the measuring body are respectively a function of the actual distance between the speed sensor and the measuring body, and a function of a change in actual distance between the speed sensor and the measuring body, and the evaluation device of the speed measuring system issues a speed unequal to a "zero" value as the actual speed of the measuring body only when the speed output signal amplitude of the speed sensor is smaller by one of a defined differential amount and a defined percent deviation of the maximum output speed signal amplitude or is larger by a defined differential amount of the minimum output speed signal amplitude.

33. (PREVIOUSLY PRESENTED) The speed measuring system according to claim 32, wherein release thresholds ( $S_o$ ,  $S_u$ ) of the speed sensor (4) specific to at least one of the speed sensor and the measuring body are respectively function of the actual distance (LS) between the speed sensor (4) and the measuring body (1) and a function of an actual change in distance between the speed sensor (4) and the measuring body (1), the evaluation device of the speed measuring system issues a speed unequal to the "zero" value, as the actual speed of the measuring body (1), only when an actual speed signal amplitude of the speed sensor (4) is greater than an upper release threshold ( $S_o$ ) or smaller than a lower release threshold ( $S_u$ ).

02/2006 - 11:48 AM

- 7 -

10/645,386

34. (CURRENTLY AMENDED) The speed measuring system according to claim 33, wherein the actual distance between the speed sensor and the measuring body represents an air gap distance between the speed sensor and the measuring body and, when ~~[[an]]~~ the air gap distance decreases, the upper and the lower release thresholds (S\_o, S\_u) and the maximum and the minimum speed signal amplitudes (A\_max, A\_min) ~~are increased~~ increase.

35. (CURRENTLY AMENDED) The speed measuring system according to claim 33, wherein the upper and the lower release thresholds (S\_o, S\_u) and the maximum and the minimum speed amplitudes (A\_max, A\_min) are stored as specific characteristic lines in the evaluation device of the speed measuring system.

6/27/06 -11:18 AM

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**